

Listing of Claims

Claims 1 – 41 (canceled)

Claim 42 (currently amended) A method of depositing gold at one or more sites on a substrate, comprising:

- (a) ~~binding, depositing or forming providing nucleation centers at said one or more sites on the substrate, wherein said nucleation centers comprising at least one are each coupled to a first member of a recognition group additionally comprising at least a second member capable of binding to the first member of the recognition group, wherein consisting of two or more molecules or complexes which bind {} to each other, the other second member of the recognition group including includes or forming forms said one or more sites, and is bound to the first member of the recognition group coupled to at least one nucleation center being one or more of the group said nucleation centers being selected from the group consisting of a metal particle, a cluster containing metal atoms, a metal-containing complex and molecules containing metal atoms;~~
- (b) providing a treatment composition which comprises a soluble gold-providing agent and is kinetically stable so that gold is not deposition unless a nucleation center is present; and
- (b) (c) Contacting contacting, under appropriate conditions said one or more sites with a the treatment composition comprising a soluble gold-providing agent, being a gold-containing molecule or complex and comprising a reagent, the composition being kinetically stable such that gold is essentially not deposited on the substrate unless a nucleation center is present on the substrate and in the presence of a nucleation center at said one or more sites, whereby gold atoms are released from said gold-providing agent and deposited onto said nucleation center to form gold metal deposits at said one or more sites.

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- Claim 43 (currently amended) A method according to Claim 42, wherein the one first member of the recognition group is coupled to at least least one nucleation center, being wherein the nucleation center is selected from one or more of the group consisting of: a cluster containing metal atoms, and metal containing complexes, and metals.
- Claim 44 (previously presented) A method according to Claim 42, wherein the one first member of the recognition group is coupled to at least one nucleation center, wherein the nucleation center is selected from being one or more of the group consisting of a gold particle, a cluster containing gold atoms, and gold-containing complexes and molecules.
- Claim 45 (currently amended) A method according to Claim 42, wherein the one first member of the recognition group is coupled to at least one nucleation center, being wherein the nucleation center is selected from one or more of the group consisting of a cluster containing gold atoms, and gold-containing complexes and molecules.
- Claim 46 (currently amended) A method according to Claim 42, wherein said {} recognition group is a member of selected from the group consisting of: an antigen and an antibody or an antibody derivative with an antigen-binding domain; sugar and a lectin; a receptor and a ligand; a nucleotide sequence and a complementary nucleotide sequence; a nucleotide sequence and its binding protein or other specific binding agent; biotin and avidin or streptavidin; cellulose or chitin, and cellulose binding domain.
- Claim 47 (previously presented) A method according to Claim 42, wherein said treatment composition is an aqueous solution.
- Claim 48 (previously presented) A method according to Claim 47, wherein said gold-providing agent is Au¹(SCN)₂.

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Claim 49 (currently amended) A method according to Claim 48, wherein said treatment composition further comprises a reagent is selected from the group consisting of hydroquinone or and naphtohydroquinone.

Claims 50 - 83 (cancelled)